

### **REMARKS**

This is in response to the Office Action mailed on September 7, 2004.

Claims 8, 14, 18, 44, 46, 50, 57, 59, and 64 are amended, no claims are canceled, and no claims are added; as a result, claims 1-79 are now pending in this application. The amendments to the claims are fully supported by the specification as originally filed. No new matter is introduced. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

#### **Claim Objections**

Claims 8, 14, and 18 were objected to because of informalities.

Claims 8, 14, and 18 are amended to clarify these claims. Applicant respectfully requests withdrawal of these objections to claims 8, 14, and 18, and reconsideration and allowance of these claims.

#### **§102 Rejection of the Claims**

Claims 50-55, 57, and 58 were rejected under 35 USC § 102(e) as being anticipated by Pramanick et al. (U.S. Patent No. 6,350,678). Applicant traverses these grounds for rejections of these claims.

Applicant reserves the right to swear behind Pramanick et al. (hereafter Pramanick) at a later date.

Applicant cannot find in Pramanick a disclosure, a teaching, or a suggestion of a zirconium barrier/adhesion layer as recited in claim 50. Thus, Applicant submits that Pramanick does not anticipate claim 50, and that, for at least this reason, claim 50 is patentable over Pramanick. Further, claims 51-55, 57, and 58 depend on claim 50 and are patentable over Pramanick for at least the reason stated above.

Applicant requests withdrawal of these rejections of claims 50-55, 57, and 58, and reconsideration and allowance of these claims.

**First §103 Rejection of the Claims**

Claims 1-49, 56, and 59-79 were rejected under 35 USC § 103(a) as being unpatentable over Pramanick et al. Applicant traverses these grounds for rejections of these claims.

The Examiner rejected claims 1-49, 56, and 59-79 based Pramanick. Applicant respectfully traverses the single reference rejection under 35 U.S.C. § 103 since not all of the recited elements of the claims are found in Pramanick. Since all the elements of the claim are not found in the reference, Applicant assumes that the Examiner is taking official notice of the missing elements. Applicant respectfully objects to the taking of official notice with a single reference obviousness rejection and, pursuant to M.P.E.P. § 2144.03, Applicant respectfully traverses the assertion of Official Notice and requests that the Examiner cite references in support of this position. Absent a reference, the Examiner is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2), M.P.E.P. 2144.03.

In the Office Action, it stated:

Pramanick can be designed and/or modified to have any suitable thickness since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges (or working thickness(es)) involves only routine skill in the art. In re Aller, 105 USPQ 233.

*In re Rose* dealt with a lumber package, where the size issue was presented as whether the package could be lifted by hand or required a lift truck. Such a size change deals with two arbitrary known sizes. The layer structure of claim 1 is not analogous to the issue of *In re Rose*, since the layer structure of claim 1 involves a specific layer structure that places specific limitations on the structure. Further, Applicant cannot find in the Office Action or in Pramanick a teaching or suggestion of a suitable thickness for a Pramanick structure that teaches or suggests the structure of claim 1. Thus, Application submits that citing *In re Rose* is not applicable to claim 1.

*In re Adler* dealt with a method claim related to temperatures and concentrations used in the claimed process, where an issue dealt with using an appropriate temperature and/or concentration. The process at issue dealt with decomposing isopropyl benzene hydroperoxide and the production of phenol and acetone, known products. The layer

structure of claim 1 is not analogous to the issue of *In re Adler*, since the layer structure of claim 1 as recited has specific features that have not been shown in the Office Action to be a known structure. Further, Applicant cannot find in the Office Action, a stated parameter as the basis against which the proffered experimentation can be measured. Thus, Application submits that citing *In re Adler* is not applicable to claim 1.

Thus, Applicant submits that Pramanick does not teach or suggest all the elements of claim 1 and that claim 1 is patentable over Pramanick. For at least similar reasons, independent claims 8, 14, 18, 23, 30, 36, 66, 72, and 76 are patentable over Pramanick. Further, claims dependent on claims 1, 8, 14, 23, 30, 66, 72, and 76 are patentable over Pramanick for at least the reasons stated above.

Further with respect to claim 18, Applicant cannot find in Pramanick a teaching or a suggestion of a layer of zirconium as recited in claim 18. Thus, Applicant submits that Pramanick does teach or suggest all the elements of claim 18 and that claim 18 is patentable over Pramanick. In addition, claims 19-22 depend on claim 18 and are patentable over Pramanick for at least the reasons stated above.

Further with respect to claim 36, Applicant cannot find in Pramanick a teaching or a suggestion of a layer of aluminum on a seed layer on a barrier/adhesion layer, where these layers are between a first level via and a metal line as recited in claim 36. The figures of Pramanick show two layers contained between a via 112 and a conductive channel 202, which does not teach or suggest the structure as recited in claim 36. Thus, Applicant submits that claim 36 is patentable over Pramanick. In addition, claims 37-43 depend on claim 36 and are patentable over Pramanick for at least the reasons stated above.

With respect to claim 44, Applicant cannot find in Pramanick a teaching or a suggestion of a zirconium barrier/adhesion layer as recited in claim 44. Thus, Applicant submits that Pramanick does not teach or suggest all the elements of claim 44 and that claim 44 is patentable over Pramanick. In addition, claims 45-49 depend on claim 44 and are patentable over Pramanick for at least the reason stated above.

With respect to claim 56, claim 56 is dependent on claim 50 and is patentable over Pramanick for at least the reasons stated with respect to claim 50.

With respect to claim 59, Applicant cannot find in Pramanick a teaching or a suggestion of a hafnium barrier/adhesion layer as recited in claim 59. Thus, Applicant submits that Pramanick does not teach or suggest all the elements of claim 59 and that claim 59 is patentable over Pramanick. Further, claims 60-65 depend on claim 59 and are patentable over Pramanick for at least the reason stated above.

Applicant requests withdrawal of these rejections of claims 1-49, 56, and 59-79, and reconsideration and allowance of these claims.

### **Second §103 Rejection of the Claims**

Claims 44-49 and 59-65 were rejected under 35 USC § 103(a) as being unpatentable over Pramanick et al. in view of Jung et al. (U.S. Patent No. 6,376,368). Applicant traverses these grounds for rejections of these claims.

Applicant does not admit that Jung et al. (hereafter Jung) is prior art. Jung was filed on August 1, 2000. The priority date of the instant application is January 18, 2000. Nevertheless Applicant reserves the right to swear behind Jung at a later date and submits that claims 44-49 and 59-65 are distinguished from the combination of Pramanick and Jung.

With respect to claim 44, Applicant cannot find in the combination of Pramanick and Jung a teaching or a suggestion of a zirconium barrier/adhesion layer as recited in claim 44. Thus, Applicant submits that Pramanick in view of Jung does not teach or suggest all the elements of claim 44 and that claim 44 is patentable over Pramanick in view of Jung. Further, claims 45-49 depend on claim 44 and are patentable over Pramanick in view of Jung for at least the reason stated above.

With respect to claim 59 Applicant cannot find in the combination of Pramanick and Jung a teaching or a suggestion of a hafnium barrier/adhesion layer as recited in claim 59. Thus, Applicant submits that Pramanick in view of Jung does not teach or suggest all the elements of claim 59 and that claim 59 is patentable over Pramanick in view of Jung. Further, claims 60-65 depend on claim 59 and are patentable over Pramanick in view of Jung for at least the reason stated above.

Applicant requests withdrawal of these rejections of claims 44-49 and 59-65, and reconsideration and allowance of these claims.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 371-2157 to facilitate prosecution of this application.

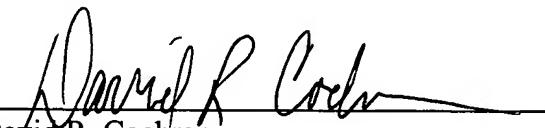
If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date 7 December 2004 By   
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 7 day of December, 2004.

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